

Arbovirus Surveillance Summary, 2005
Massachusetts Department of Public Health (MDPH)
Arbovirus Surveillance Program

WEST NILE VIRUS (WNV)

Birds

In 2005, 2495 dead birds were reported to the MDPH Arbovirus Surveillance Program. Of the 303 that were tested for WNV, 40 crows and 43 blue jays were positive for WNV (see table below). Birds that tested positive for WNV were found in 52 towns from 10 counties.

Number of Birds Reported, Tested and Positive for WNV by Species, 2005

Status	Species				Total
	Crow	Blue jay	Robin	Other	
Reported	393	396	164	1542	2495
Tested	100	109	39	55	303
WNV (+)	40	43	0	0	83

Mosquito Samples

Ninety-nine of 8136 mosquito samples collected and tested were positive for WNV during the 2005 transmission season. Positive samples were identified in 30 towns in 8 counties. Positive mosquito samples included one sample of *Aedes vexans*, 6 samples of *Culiseta melanura*, 5 samples of *Culex species*, 13 samples of *Culex pipiens*, 65 samples of *Culex pipiens / restuans* complex, two samples of *Culex restuans*, five samples of *Culex salinarius*, and two samples of *Ochlerotatus japonicus*.

Horses

There were no cases of WNV infection identified in horses in Massachusetts in 2005.

Humans

Six WNV human cases were identified in 5 towns from 3 counties. All of the cases were female. The ages of these cases were 33, 55, 56, 57, 67 and 80 years. (Average age: 58 years). Onsets ranged from 9/1/05-9/27/05. Two of the cases were considered West Nile fever cases and were not hospitalized. The remaining four WNV cases had meningitis, encephalitis or meningoencephalitis and all required hospitalization. There was one fatality in an 80 year old. This was the first human fatality from WNV in Massachusetts since 2003.

Specimens Submitted and WNV Positive by Year, 2001-2005*

Species	2001		2002		2003		2004		2005	
	Tested	Positive	Tested	Positive	Tested	Positive	Tested	Positive	Tested	Positive
Birds	2396	1104	857	575	599	429	86	8	303	83
Mosquito Pools	6297	25	6471	68	5980	48	7200	15	8136	99
Horses	91	45	40	2	38	8	19	0	12	0
Humans	247	3	614	24**	790	19***	440	0	544	6

*Comparisons between years must consider variations in surveillance criteria.

** Includes two cases in out of state residents; however, their exposure was believed to have been in Massachusetts.

***Includes one case believed to have been contracted out of state and one probable case.

EASTERN EQUINE ENCEPHALITIS (EEE) VIRUS

Birds

Birds are not routinely tested for EEE virus in Massachusetts. However, one emu tested positive for EEE virus in 2005 from the city of Athol in Worcester County.

Mosquito Samples

Forty-five of 8136 mosquito samples tested were positive for EEE virus in Massachusetts in 2005. They were collected from 21 towns in 6 counties. Positive EEE virus mosquito samples included 2 samples of *Coquilleltidia perturbans*, 41 samples of *Culiseta melanura*, one sample of *Culex pipiens / restuans* complex, and one sample of *Ochlerotatus japonicus*.

Horses

Four horses tested positive for EEE virus in Massachusetts in 2005. They were identified in 4 towns from 3 counties.

Humans

Four EEE human cases were identified in 4 towns, all within Plymouth County. The ages of these cases were 3 months, 5, 63 and 83 years (Average age: 38 years). Three of the cases were female. Onsets ranged from 8/21/05-8/27/05. All cases required hospitalization and there were 2 fatalities.

Specimens Submitted and EEE Virus Positive by Year, 2001-2005*

Species	2001		2002		2003		2004		2005	
	Tested	Positive	Tested	Positive	Tested	Positive	Tested	Positive	Tested	Positive
Mosquito Samples	6297	12	6471	1	5980	9	7730	39	8136	45
Horses	91	0	42	0	38	4	34	7	12	4
Humans	50	1	91	0	329	0	389	4	540	4
Other**	0	0	0	0	1	1	2	2	1	1

* Comparisons between years must consider variations in surveillance criteria.

** This includes one emu in 2003; one emu and one alpaca in 2004, and one emu in 2005.

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